European Journal of Soil Science, December 1998, **49**, 717–719

European Journal of Soil Science

Volume 49 1998

Author index

Addiscott, T.M. *see* Hesketh, N.
Adey, M.A. *see* Wu, J.
Agbenin, J.O. Phosphate-induced zinc retention in a tropical semi-arid soil, 693
Ambrosi, J.P. *see* Cornu, S.
Ambus, P. Nitrous oxide production by denitrification and nitrification in temperate forest, grassland and agricultural soils, 495
Aran, D., Gury, M., Zida, M., Jeanroy, E. & Herbillon, A.J. Influence de la roche-mère et du climat sur les propriétés andiques des sols en région montagnarde tempérée (Vosges, France), 269
Attou, F., Bruand, A. & Le Bissonnais, Y. Effect of clay content and silt–clay fabric on stability of artificial aggregates, 569

Baert, G. *see* Van Ranst, E.
Barrow, N.J. & Whelan, B.R. Comparing the effects of pH on the sorption of metals by soil and by goethite, and on uptake by plants, 683
Bear, J. *see* Wang, F.
Bech, J. *see* Martín-García, J.M.
Beltran, J., Gerritse, R.G. & Hernandez, F. Effect of flow rate on the adsorption and desorption of glyphosate, simazine and atrazine in columns of sandy soils, 149
Berggren, D. *see* Simonsson, M.
Berggren, D., Mulder, J. & Westerhof, R. Prolonged leaching of mineral forest soils with dilute HCl solutions: the solubility of Al and soil organic matter, 305
Bird, N.R.A. *see* Hallett, P.D.
Bol, R. *see* Huang, Y.
Boon, J.J. *see* Dijkstra, E.F.
Boon, J.J. *see* Huang, Y.
Borggaard, O.K. *see* Raulund-Rasmussen, K.
Boucneau, G., Van Meirvenne, M., Thas, O. & Hofman, G. Integrating properties of soil map delineations into ordinary kriging, 213
Bragato, G., Mori, A. & De Nobili, M. Capillary electrophoretic behaviour of humic substances from *Sphagnum* peats of various geographical origin: relation with the degree of decomposition, 589
Brassington, D.S. *see* Jones, D.L.
Brookes, P.C. *see* Hesketh, N.
Bruand, A. *see* Attou, F.
Bruand, A. *see* Fiès, J.C.
Bruckler, L. *see* Chanzy, A.
Buurman, P. *see* Nierop, K.G.J.

Cabidoche, Y.-M. & Guillaume, P. A casting method for the three-dimensional analysis of the intraprism structural pores in vertisols, 187
Cabidoche, Y.-M. *see* Ruy, S.
Cabrera, F. *see* Rieu, M.
Cassman, K.G. *see* Olk, D.C.
Castro, B. & Torrent, J. Phosphate sorption by calcareous Vertisols and Inceptisols as evaluated from extended P-sorption curves, 661
Catt, J.A. *see* Goss, M.J.
Chadoeuf, J. *see* Chanzy, A.
Chanzy, A., Chadoeuf, J., Gaudu, J.C., Mohrath, D., Richard, G. & Bruckler, L. Soil moisture monitoring at the field scale using automatic capacitance probes, 637
Christensen, B.T. & Olesen, J.E. Nitrogen mineralization potential of organomineral size separates from soils with annual straw incorporation, 25
Christian, D.G. *see* Goss M.J.
Condron, L.M. & Newman, R.H. Chemical nature of soil organic matter under grassland and recently established forest, 597
Conen, F. & Smith, K.A. A re-examination of closed flux chamber methods for the measurement of trace gas emissions from soils to the atmosphere, 701
Cornu, S., Lucas, Y., Ambrosi, J.P. & Desjardins, T. Transfer of dissolved Al, Fe and Si in two Amazonian forest environments in Brazil, 377

D'Acqui, L.P., Daniele, E., Fornasier, F., Radaelli, L. & Ristori, G.G. Interaction between clay microstructure, decomposition of plant residues and humification, 579
Daniele, E. *see* D'Acqui, L.P.
De Haan, F.A.M. *see* Temminghoff, E.J.M.
De Jesus Filho, M.F. *see* Doriguetto, A.C.
De Nobili, M. *see* Bragato, G.
Delgado, G. *see* Martín-García, J.M.
Delgado, R. *see* Martín-García, J.M.
Delvaux, B. *see* Maes, E.
Derbyshire, E. *see* Kemp, R.A.
Desjardins, T. *see* Cornu, S.
Dexter, A.R. *see* Hallett, P.D.
Dexter, A.R. *see* Watts C.W.
Diels, J. *see* Vanlauwe, B.
Dijkstra, E.F., Boon, J.J. & Van Mourik, J.M. Analytical pyrolysis of a soil profile under Scots pine, 295
Doriguetto, A.C., Goulart, A.T., De Jesus Filho, M.F., Fabris, J.D. & Santana, G.P. Ilmenite in soil forming from a Brazilian amphibolite, 541
Duchateau, L. *see* Vanlauwe, B.
Dzwowa, P.K. *see* Van Ranst, E.

Eglinton, G. *see* Huang, Y.

Fabris, J.D. *see* Doriguetto, A.C.
Fiès, J.C. & Bruand, A. Particle packing and organization of the textural porosity in clay–silt–sand mixtures, 557
Flessa, H., Wild, U., Klemisch, M. & Pfadenhauer, J. Nitrous oxide and methane fluxes from organic soils under agriculture, 327
Fornasier, F. *see* D'Acqui, L.P.
Fraser, P.M. *see* Haynes, R.J.
Friedl, J. *see* Singer, A.
Funk, F. *see* Geiger, G.
Furrer, G. *see* Lothenbach, B.

©1998 Blackwell Science Ltd

Gabrielle, B. *see* Leviel, B.
Gallart, F. *see* Pardini, G.
Gaudu, J.C. *see* Chanzy, A.
Gehring, A.U. *see* Weidler, P.G.
Geiger, G., Livingston, M.P., Funk, F. & Schulin, R. β-glucosidase activity in the presence of copper and goethite, 17
Gerritse, R.G. *see* Beltran, J.
Gijsman, A.J. & Sanz, J.I. Soil organic matter pools in a volcanic-ash soil under fallow or cultivation with applied chicken manure, 427
Goss, M.J., Howse, K.R., Christian, D.G., Catt, J.A. & Pepper, T.J. Nitrate leaching: modifying the loss from mineralized organic matter, 649
Gosse, G. *see* Leviel, G.
Göttlein, A. Determination of free Al^{3+} in soil solutions by capillary electrophoresis, 107
Goulart, A.T. *see* Doriguetto, A.C.
Griffiths, B.S. *see* Young, I.M.
Guillaume, P. *see* Cabidoche, Y.-M.
Gupta, S.K. *see* Lothenbach, B.
Gury, M. *see* Aran, D.

Hadas, A., Parkin, T.B. & Stahl, P.D. Reduced CO_2 release from decomposing wheat straw under N-limiting conditions: simulation of carbon turnover, 487
Hallett, P.D., Bird, N.R.A., Dexter, A.R. & Seville, J.P.K. Investigation into the fractal scaling of the structure and strength of soil aggregates, 203
Hansen, H.C.B. *see* Raulund-Rasmussen, K.
Haumaier, L. *see* Miltner, A.
Haygarth, P.M., Hepworth, L. & Jarvis, S.C. Forms of phosphorus transfer in hydrological pathways from soil under grazed grassland, 65
Haynes, R.J. & Fraser, P.M. A comparison of aggregate stability and biological activity in earthworm casts and uningested soil as affected by amendment with wheat or lucerne straw, 629
Hedley, M.J. *see* Zoysa, A.K.N.
Hepworth, L. *see* Haygarth, P.M.
Herbillon, A.J. *see* Aran, D.
Hernandez, F. *see* Beltran, J.
Hesketh, N., Brookes, P.C. & Addiscott, T.M. Chlordane transport in a sandy soil: effects of suspended soil material and pig slurry, 709
Hirsch, C. *see* Prietzel, J.
Hofman, G. *see* Boucneau, G.
Horgan, G.W. Mathematical morphology for analysing soil structure from images, 161
Howse, K.R. *see* Goss, M.J.
Huang, Y., Eglinton, G., Van Der Hage, E.R.E., Boon, J.J., Bol, R. & Ineson, P. Dissolved organic matter and its parent organic matter in grass upland soil horizons studied by analytical pyrolysis techniques, 1

Ilvesniemi, H. *see* Liski, J.
Ilvesniemi, H. *see* Nissinen, A.
Ineson, P. *see* Huang, Y.

Jarvis, S.C. *see* Haygarth, P.M.
Jeanroy, E. *see* Aran, D.
Jones, D.L. & Brassington, D.S. Sorption of organic acids in acid soils and its implications in the rhizosphere, 447
Justes, E. *see* Leviel, G.

Karltun, E. Modelling SO_4^{2-} surface complexation on variable charge minerals. II. Competition between SO_4^{2-}, oxalate and fulvate, 113
Kemp, R.A. & Derbyshire, E. The loess soils of China as records of climatic change, 525
Khanna, P.K. *see* Ludwig, B.
Kirby, J.M. Estimating critical state soil mechanics parameters from shear box tests, 503
Kirby, J.M., O'Sullivan, M.F. & Wood, J.T. Estimating critical state soil mechanics parameters from constant cell volume triaxial tests, 85
Klemisch, M. *see* Flessa, H.
Krebs, R. *see* Lothenbach, B.

Larqué, P. *see* Vogt, T.
Le Bissonnais, Y. *see* Attou, F.
Leviel, B., Gabrielle, B., Justes, E., Mary, B. & Gosse, G. Water and nitrate budgets in a rendzina cropped with oilseed rape receiving varying amounts of fertilizer, 37
Liski, J., Ilvesniemi, H., Mäkelä, A. & Starr, M. Model analysis of the effects of soil age, fires and harvesting on the carbon storage of boreal forest soils, 407
Livingston, M.P. *see* Geiger, G.
Loganathan, P. *see* Zoysa, A.K.N.
Lothenbach, B., Krebs, R., Furrer, G., Gupta, S.K. & Schulin, R. Immobilization of cadmium and zinc in soil by Al-montmorillonite and gravel sludge, 141
Lucas, Y. *see* Cornu, S.
Ludwig, B., Prenzel, J. & Khanna, P.K. Modelling cations in three acid soils with differing acid input in Germany, 437
Luster, J. *see* Weidler, P.G.

Maes, E., Delvaux, B. & Thiry, Y. Fixation of radiocaesium in an acid brown forest soil, 133
Mahieu, N. *see* Olk, D.C.
Mäkela, A. *see* Liski, J.
Martín-García, J.M., Delgado, G., Párraga, J.F., Bech, J. & Delgado, R. Mineral formation in micaceous Mediterranean Red soils of Sierra Nevada, Granada, Spain, 253
Mary, B. *see* Leviel, B.
McMillan, S.G. & Schwertmann, U. Morphological and genetic relations between siderite, calcite and goethite in a Low Moor Peat from southern Germany, 283
McNicol, J.W. *see* Young, I.M.
Merckx, R. *see* Vanlauwe, B.
Miltner, A., Haumaier, L. & Zech, W. Transformations of phosphorus during incubation of beech leaf litter in the presence of oxides, 471
Miyazaki, T. *see* Seki, K.
Mohrath, D. *see* Chanzy, A.
Moreno, F. *see* Rieu, M.
Mori, A. *see* Bragato, G.
Mulder, J. *see* Berggren, D.

Nakano, M. *see* Seki, K.
Newman, R.H. *see* Condron, L.M.
Nierop, K.G.J. & Buurman, P. Composition of soil organic matter and its water-soluble fraction under young vegetation on drift sand, central Netherlands, 605
Nissinen, A., Ilvesniemi, H. & Tanskanen, N. Apparent cation-exchange equilibria in podzolic forest soils, 121

O'Donnell, A.G. *see* Wu, J.
O'Sullivan, M.F. *see* Kirby, J.M.
Olesen, J.E. *see* Christensen, B.T.
Olk, D.C., Cassman, K.G., Mahieu, N. & Randall, E.W. Conserved chemical properties of young humic acid fractions in tropical lowland soil under intensive irrigated rice cropping, 337
Olsson, M. *see* Raulund-Rasmussen, K.

Pardini, G. & Gallart, F. A combination of laser technology and fractals to analyse soil surface roughness, 197
Parkin, T.B. *see* Hadas, A.
Párraga, J.F. *see* Martín-García, J.M.
Pepper, T.J. *see* Goss, M.J.
Pfadenhauer, J. *see* Flessa, H.
Prenzel, J *see* Ludwig, B.
Prietzel, J. & Hirsch, C. Extractability and dissolution kinetics of pure and soil-added synthesized aluminium hydroxy sulphate minerals, 669

Radaelli, L. *see* D'Acqui, L.P.
Randall, E.W. *see* Olk, D.C.
Raulund-Rasmussen, K., Borggaard, O.K., Hansen, H.C.B. & Olsson, M. Effect of natural organic soil solutes on weathering rates of soil minerals, 397

Richard, G. *see* Chanzy, A.
Rieu, M., Vaz, R., Cabrera, F. & Moreno, F. Modelling the concentration or dilution of saline soil-water systems, 53
Ristori, G.G. *see* D'Acqui, L.P.
Robertson, W.M. *see* Young, I.M.
Roth, K. *see* Vogel, H.J.
Ruy, S. & Cabidoche, Y.-M. Hydraulic conductivity of the matric porosity of an unsaturated vertisol: a field and laboratory comparison, 175

Sanginga, N. *see* Vanlauwe, B.
Santana, G.P. *see* Doriguetto, A.C.
Sanz, J.I. *see* Gijsman, A.J.
Schneider, J. *see* Weidler, P.G.
Schulin, R. *see* Geiger, G.
Schulin, R. *see* Lothenbach, B.
Schwertmann, U. *see* McMillan, S.G.
Schwertmann, U. *see* Singer, A.
Seki, K., Miyazaki, T. & Nakano, M. Effects of microorganisms on hydraulic conductivity decrease in infiltration, 231
Seville, J.P.K. *see* Hallett, P.D.
Shamshuddin, J. *see* Van Ranst, E.
Shaviv, A. *see* Wang, F.
Simonsson, M. & Berggren, D. Aluminium solubility related to secondary solid phases in upper B horizons with spodic characteristics, 317
Singer, A., Schwertmann, U. & Friedl, J. Iron oxide mineralogy of Terre Rosse and Rendzinas in relation to their moisture and temperature regimes, 385
Smith, K.A. *see* Conen, F.
Sørensen, P. Carbon mineralization, nitrogen immobilization and pH change in soil after adding volatile fatty acids, 457
Stahl, P.D. *see* Hadas, A.
Starr, M. *see* Liski, J.
Sticher, H. *see* Weidler, P.G.
Syers, J.K. *see* Wu, J.

Tanskanen, N. *see* Nissinen, A.
Temminghoff, E.J.M., Van Der Zee, S.E.A.T.M. & De Haan, F.A.M. Effects of dissolved organic matter on the mobility of copper in a contaminated sandy soil, 617
Thas, O. *see* Boucneau, G.
Thiry, Y. *see* Maes, E.
Torrent, J. *see* Castro, B.

Van Der Hage, E.R.E. *see* Huang, Y.
Van Der Zee, S.E.A.T.M. *see* Temminghoff, E.J.M.
Van Meirvenne, M. *see* Boucneau, G.
Van Mourik, J.M. *see* Dijkstra, E.F.
Van Ranst, E., Shamshuddin, J., Baert, G. & Dzwowa, P.K. Charge characteristics in relation to free iron and organic matter of soils from Bambouto Mountains, Western Cameroon, 243
Vanlauwe, B., Diels, J., Duchateau, L., Sanginga, N. & Merckx, R. Mineral N dynamics in bare and cropped *Leucaena leucocephala* and *Dactyladenia barteri* alley cropping systems after the addition of ^{15}N-labelled leaf residues, 417
Vaz, R. *see* Rieu, M.
Vityakon, P. *see* Wu, J.
Vogel, H.J. & Roth, K. A new approach for determining effective soil hydraulic functions, 547
Vogt, T. & Larqué, P. Transformations and neoformations of clay in the cryogenic environment: examples from Transbaikalia (Siberia) and Patagonia (Argentina), 367

Wang, F., Bear, J. & Shaviv, A. Modelling simultaneous release, diffusion and nitrification of ammonium in the soil surrounding a granule or nest containing ammonium fertilizer, 351
Watts, C.W. & Dexter, A.R. Soil friability: theory, measurement and the effects of management and organic carbon content, 73
Weidler, P.G., Luster, J., Schneider, J., Sticher, H. & Gehring, A.U. The Rietveld method applied to the quantitative mineralogical and chemical analysis of a ferralitic soil, 95
Westerhof, R. *see* Berggren, D.
Whelan, B.R. *see* Barrow, N.J.
Wild, U. *see* Flessa, H.
Wood, J.T. *see* Kirby, J.M.
Wu, J., O'Donnell, A.G., Syers, J.K., Adey, M.A. & Vityakon, P. Modelling soil organic matter changes in ley–arable rotations in sandy soils of Northwest Thailand, 463

Young, I.M., Griffiths, B.S., Robertson, W.M. & Nicol, J.W. Nematode (*Caenorhabditis elegans*) movement in sand as affected by particle size, moisture and the presence of bacteria (*Escherichia coli*), 237

Zech, W. *see* Miltner, A.
Zida, M. *see* Aran, D.
Zoysa, A.K.N., Loganathan, P. & Hedley, M.J. Phosphate rock dissolution and transformation in the rhizosphere of tea (*Camellia sinensis* L.) compared with other plant species, 477

European Journal of Soil Science, December 1998, **49**, 721–725

European Journal of Soil Science

Volume 49 1998

Subject index

acid soils
  brown forest, fixation of radiocaesium in 133
  in Germany, cations in 437
  sorption of organic acids in and implications in rhizosphere 447
  see also pH
adsorption of glyphosate, simazine and atrazine in sandy soils, effect of flow rate on 149
age of soil and carbon storage of boreal forest soils 407
aggregate
  artificial, effect of clay and silt–clay fabric on stability of 569
  fractal scaling of structure and strength of 203
  stability and biological activity in earthworm casts and uningested soil 629
agriculture/cultivation
  alley cropping systems and addition of ^{15}N-labelled leaf residues 417
  harvesting and carbon storage of boreal forest soils 407
  intensive irrigated rice, conserved chemical properties of young humic acid fractions in tropical lowland soil under 337
  ley–arable rotations in sandy soils, organic matter changes in 463
  nitrous oxide production by denitrification and nitrification 495
  organic matter pools in volcanic-ash soil under fallow or cultivation with applied chicken manure 427
  organic soils under, nitrous oxide and methane fluxes from 327
  tea rhizosphere, phosphate rock dissolution and transformation in 477
  see also fertilizer
aluminium
  Al^{3+} in soil solutions determined by capillary electrophoresis 107
  dissolved: transfer in Amazonian forest 377
  hydroxy sulphate minerals, extractability and dissolution kinetics of 669
  -montmorillonite, immobilization of cadmium and zinc in soil by 141
  solubility
    in leached mineral forest soils 305
    related to secondary solid phases in upper B horizons with spodic characteristics 317
Amazonian forest (Brazil), transfer of dissolved Al, Fe and Si in 377
ammonium fertilizer, modelling simultaneous release, diffusion and nitrification of 351
amphibolite, ilmenite in soil from 541
analytical pyrolysis
  of organic matter in grass upland soil horizons 1
  of soil profile under Scots pine 295
andiques propriétées des sols en région montagnarde tempérée, influence de la roche-mère et du climat sur 269
apparent cation-exchange equilibria in podzolic forest soils 121
Argentina *see* Patagonia
atrazine adsorption/desorption in sandy soils, effect of flow rate on 149

B horizons, upper, with spodic characteristics, Al solubility related to secondary solid phases in 317
bacteria: particle size and moisture affecting nematode movement in sand 237
Bambouto Mountains, Western Cameroon: charge characteristics in relation to free iron and organic matter of soils of 243
beech leaf litter: phosphorus transformation during incubation in presence of oxides 471
β-glucosidase activity in presence of copper and goethite 17
boreal forest soils, effects of soil age, fires and harvesting on carbon storage of 407
Brazil
  Amazonian forest, transfer of dissolved Al, Fe and Si in 377
  ilmenite in amphibolite 541
brown forest soil, fixation of radiocaesium in 133

cadmium
  immobilized in soil by Al-montmorillonite and gravel sludge 141
  sorption and uptake, effects of pH on 683
Caenorhabditis elegans movement in sand as affected by particle size, moisture and presence of bacteria 237
calcareous soils: phosphate sorption evaluated from P-sorption curves 661
calcite, siderite and goethite in Low Moor Peat, genetic and morphological relations between 283
Camellia sinensis see tea
Cameroon, Western *see* Bambouto Mountains
capacitance probes, moisture monitoring using 637
capillary electrophoresis
  free Al^{3+} in soil solutions determined by 107
  of humic substances from *Sphagnum* peats 589
carbon
  mineralization after adding volatile fatty acids 457
  organic, and friability of soil 73
  storage of boreal forest soils, effects of soil age, fires and harvesting on 407
  turnover simulation: CO_2 release from decomposing wheat straw under N-limiting conditions 487
casting method for three-dimensional analysis of intraprism structural pores in vertisols 187
cations
  -exchange equilibria in podzolic forest soils, apparent 121
  in acid soils in Germany 437
charge characteristics in relation to free iron and organic matter 243
chemical analysis of ferralitic soil, Rietveld method applied to 95
chemical nature of soil organic matter under grassland and recently established forest 597
chicken manure, organic matter pools in volcanic-ash soil with 427
China: loess soils as records of climatic change 525
chlordane transport in sandy soil: effects of suspended soil material and pig slurry 709
clay
  content and silt–clay fabric, effect on stability of artificial aggregates 569

© 1998 Blackwell Science Ltd

clay (continued)
microstructure, effect of decomposition of plant residues and humification on 579
textural porosity in clay–silt–sand mixtures 557
transformations and neoformations in cryogenic environment 367
climate
change, loess soils of China as records of 525
influence sur les propriétés andiques des sols en région montagnarde tempérée 269
closed flux chambers for measurement of trace gas emissions from soils 701
CO_2 release from decomposing wheat straw under N-limiting conditions 487
cobalt sorption and uptake, effects of pH on 683
concentration of saline soil-water systems 53
conductivity, hydraulic *see* hydraulic conductivity
conserved chemical properties of young humic acid fractions in tropical lowland soil under intensive irrigated rice cropping 337
constant cell volume triaxial tests estimating critical state soil mechanics parameters 85
copper
β-glucosidase activity in presence of 17
mobility in contaminated sandy soil and effects of dissolved organic matter 617
critical state soil mechanics parameters estimated
from constant cell volume triaxial tests 85
from shear box tests 503
cryogenic environment, transformations and neoformations of clay in 367
cultivation *see* agriculture/cultivation

Dactyladenia barteri: N dynamics after addition of ^{15}N-labelled leaf residues 417
decomposition
of plant residues and clay microstructure 579
in *Sphagnum* peats and capillary electrophoresis of humic substances from 589
denitrification, nitrous oxide production by 495
desorption of glyphosate, simazine and atrazine in sandy soils, effect of flow rate on 149
diffusion of ammonium in soil surrounding granule containing ammonium fertilizer 351
dilution of saline soil-water systems 53
dissolution kinetics of synthesized aluminium hydroxy sulphate minerals 669
dissolved matter *see* solution/solubility

earthworm casts: aggregate stability and biological activity affected by amendment with wheat or lucerne straw 629
electrophoresis, free Al^{3+} in soil solutions determined by 107
Escherichia coli particle size and moisture affecting nematode movement in sand 237
extractability of synthesized aluminium hydroxy sulphate minerals 669

fallow: volcanic-ash soil with applied chicken manure, organic matter pools in 427
fatty acids, volatile: carbon mineralization, nitrogen immobilization and pH change of soil after adding 457
Fe *see* iron
ferralitic soil, Rietveld method applied to quantitative mineralogical and chemical analysis of 95
fertilizer
modelling simultaneous release, diffusion and nitrification of ammonium 351
in rendzina cropped with oilseed rape 37
see also agriculture; chicken manure
fires and carbon storage of boreal forest soils 407
fixation of radiocaesium in acid brown forest soil 133
flow rate and adsorption/desorption of glyphosate, simazine and atrazine in sandy soils 149
fluxes of nitrous oxide and methane from organic soils under agriculture 327

forests and forest soils
acid brown, fixation of radiocaesium in 133
Amazonian, transfer of dissolved Al, Fe and Si in 377
boreal, effects of soil age, fires and harvesting on carbon storage of 407
leached with dilute HCl solutions: solubility of Al and soil organic matter 305
podzolic, apparent cation-exchange equilibria in 121
recently established, chemical nature of organic matter 597
temperate, nitrous oxide production by denitrification and nitrification in 495
fractals
scaling of structure and strength of soil aggregates 203
used to analyse soil surface roughness 197
France *see* Vosges
free Al^{3+} in soil solutions determined by capillary electrophoresis 107
friability of soil: theory, measurement and effects of management and organic carbon content 73
fulvate: competition with SO_4^{2-} in surface complexation 113

gas emissions from soils, closed flux chambers for measurement of 701
genetic and morphological relations between siderite, calcite and goethite in Low Moor Peat 283
Germany
cations in acid soils in 437
morphological and genetic relations between siderite, calcite and goethite in Low Moor Peat from 283
glucosidase activity in presence of copper and goethite 17
glyphosate adsorption/desorption in sandy soils, effect of flow rate on 149
goethite
β-glucosidase activity in presence of 17
pH effects on sorption of metals by 683
siderite and calcite in Low Moor Peat, genetic and morphological relations between 283
grass
grazed, phosphorus transfer in hydrological pathways from soil under 65
nitrous oxide production by denitrification and nitrification in 495
recently established, chemical nature of soil organic matter under 597
upland soil horizons, organic matter in 1
gravel sludge, immobilization of cadmium and zinc in soil by 141

harvesting and carbon storage of boreal forest soils 407
HCl solutions, leaching of mineral forest soils with: solubility of Al and soil organic matter 305
humic acid fractions in tropical lowland soil, conserved chemical properties of 337
humic substances from *Sphagnum* peats: capillary electrophoresis and degree of decomposition 589
humification and clay microstructure 579
hydraulic conductivity
decrease in infiltration, effects of microorganisms on 231
of matric porosity of unsaturated vertisol 175
hydraulic functions, new approach for determining effective 547
hydrological pathways from soil under grazed grassland, phosphorus transfer in 65

ilmenite in soil from Brazilian amphibolite 541
image analysis of soil structure 161
immobilization of cadmium and zinc in soil by Al-montmorillonite and gravel sludge 141
inceptisols, calcareous: phosphate sorption evaluated from P-sorption curves 661
infiltration, effects of microorganisms on hydraulic conductivity decrease in 231
integrating properties of soil map delineations into ordinary kriging 213
intraprism structural pores in vertisols, three-dimensional analysis of 187
iron
dissolved: transfer in Amazonian forest 377
free, charge characteristics in relation to 243
oxide mineralogy of Terre Rosse and rendzinas in relation to moisture and temperature regimes 385
irrigated rice cropping, conserved chemical properties of young humic acid fractions in tropical lowland soil under 337

kinetics of synthesized aluminium hydroxy sulphate minerals 669
kriging, ordinary, integrating properties of soil map delineations into 213

laser technology used to analyse soil surface roughness 197
leaching
  of mineral forest soils with dilute HCl solutions: solubility of Al and soil organic matter 305
  of nitrates: modifying loss from mineralized organic matter 649
Leucaena leucocephala, N dynamics in after addition of ^{15}N-labelled leaf residues 417
ley–arable rotations in sandy soils of Northeast Thailand, organic matter changes in 463
loess soils of China as records of climatic change 525
Low Moor Peat, genetic and morphological relations between siderite, calcite and goethite in 283
lucerne hay and aggregate stability and biological activity by earthworms 629

management effects on friability of soil 73
manure: organic matter pools in volcanic-ash soil under fallow or cultivation 427
map, soil: integrating properties of delineations into ordinary kriging 213
mathematical morphology for analysing soil structure from images 161
matric porosity of unsaturated vertisol, hydraulic conductivity of 175
mechanics, soil: parameters estimated from shear box tests 503
Mediterranean Red soils, mineral formation in 253
methane fluxes from organic soils under agriculture 327
micaceous Mediterranean Red soils, mineral formation in 253
microorganisms and hydraulic conductivity decrease in infiltration 231
mineral
  forest soils leached with dilute HCl solutions: solubility of Al and soil organic matter 305
  formation in micaceous Mediterranean Red soils 253
  mineralization of carbon after adding volatile fatty acids 457
  mineralization potential of organomineral size separates from soils with annual straw incorporation 25
  mineralogical analysis of ferralitic soil, Rietveld method applied to 95
mineralogy
  iron oxide, of Terre Rosse and rendzinas in relation to moisture and temperature regimes 385
  N dynamics in bare and cropped *Leucaena leucocephala* and *Dactyladenia barteri* alley cropping systems after addition of ^{15}N-labelled leaf residues 417
  weathering rates affected by organic soil solutes 397
modelling
  cations in acid soils 437
  effects of soil age, fires and harvesting on carbon storage of boreal forest soils 407
  organic matter changes in ley–arable rotations in sandy soils 463
  simultaneous release, diffusion and nitrification of ammonium in soil surrounding granule containing ammonium fertilizer 351
  SO_4^{2-} surface complexation on variable charge minerals: competition with oxalate and fulvate 113
moisture
  affecting nematode movement in sand 237
  monitoring using automatic capacitance probes 637
  and temperature regimes, iron oxide mineralogy in Terre Rosse and rendzinas 385
  see also water
morphology
  mathematical, for analysing soil structure from images 161
  relations between siderite, calcite and goethite in Low Moor Peat 283
mountains/upland
  influence de la roche-mère et du climat sur les propriétés andiques des sols en région montagnarde tempérée 269
  soil horizons, grass, organic matter in 1

N *see* nitrogen
nematode movement in sand as affected by particle size, moisture and presence of bacteria 237
Netherlands: soil organic matter and water-soluble fraction under young vegetation on drift sand 605
nickel sorption and uptake, effects of pH on 683
nitrate
  budgets in rendzina cropped with oilseed rape receiving varying amounts of fertilizer 37
  leaching: modifying loss from mineralized organic matter 649
nitrification
  of ammonium in soil surrounding granule containing ammonium fertilizer 351
  in temperate forest, grassland and agricultural soils, nitrous oxide production by 495
nitrogen
  ^{15}N-labelled leaf residues, N dynamics after addition of 417
  dynamics in bare and cropped *Leucaena leucocephala* and *Dactyladenia barteri* alley cropping systems after addition of ^{15}N-labelled leaf residues 417
  immobilization after adding volatile fatty acids 457
  -limiting conditions, CO_2 release from decomposing wheat straw under 487
  mineralization potential of organomineral size separates from soils with annual straw incorporation 25
nitrous oxide
  fluxes from organic soils under agriculture 327
  production by denitrification and nitrification 495

oilseed rape: water and nitrate budgets in rendzina receiving varying amounts of fertilizer 37
organic matter
  carbon content and friability of soil 73
  changes in ley–arable rotations in sandy soils 463
  charge characteristics in relation to 243
  chemical nature under grassland and recently established forest 597
  composition and water-soluble fraction under young vegetation on drift sand 605
  dissolved, and mobility of copper in contaminated sandy soil 617
  in grass upland soil horizons studied by analytical pyrolysis techniques 1
  mineralized, modifying nitrate loss from 649
  organic soils under agriculture, nitrous oxide and methane fluxes from 327
  pools in volcanic-ash soil under fallow or cultivation with applied chicken manure 427
  solubility in leached mineral forest soils 305
  solutes: effect on weathering rates of minerals 397
organomineral size separates from soils with annual straw incorporation, nitrogen mineralization potential of 25
oxalate: competition with SO_4^{2-} in surface complexation 113
oxides
  iron, mineralogy of Terre Rosse and rendzinas in relation to moisture and temperature regimes 385
  transformation of phosphorus during incubation of beech leaf litter in presence of 471
  see also nitrous oxide

particle
  packing and organization of textural porosity in clay–silt–sand mixtures 557
  size affecting nematode movement in sand 237
Patagonia (Argentina), transformations and neoformations of clay in cryogenic environment in 367
pH
  change in soil after adding volatile fatty acids 457
  effects on sorption of metals by soil and goethite and uptake by plants 683
  see also acid soils
phosphate
  -induced zinc retention in tropical semi-arid soil 693
  rock dissolution and transformation in rhizosphere of tea compared with other plant species 477
  sorption by calcareous Vertisols and Inceptisols evaluated from P-sorption curves 661
phosphorus
  transfer in hydrological pathways from soil under grazed grassland 65

phosphorus (continued)
transformation during incubation of beech leaf litter in presence of oxides 471
pig slurry and chlordane transport in sandy soil 709
plants/vegetation
on drift sand, soil organic matter and water-soluble fraction under 605
metal uptake and effects of pH on 683
residue decomposition and clay microstructure 579
see also forests; grass
podzolic forest soils, apparent cation-exchange equilibria in 121
porosity
in clay–silt–sand mixtures 557
of unsaturated vertisol, hydraulic conductivity of 175
P-sorption curves, phosphate sorption by calcareous Vertisols and Inceptisols evaluated from 661
pyrolysis
of organic matter in grass upland soil horizons 1
of soil profile under Scots pine 295

quantitative mineralogical and chemical analysis of ferralitic soil, Rietveld method applied to 95

radiocaesium fixation in acid brown forest soil 133
rendzina
cropped with oilseed rape receiving varying amounts of fertilizer, water and nitrate budgets in 37
iron oxide mineralogy in relation to moisture and temperature regimes 385
rhizosphere
sorption of organic acids in acid soils and its implications in 447
of tea, phosphate rock dissolution and transformation in 477
rice cropping, intensive irrigated: conserved chemical properties of young humic acid fractions in tropical lowland soil under 337
Rietveld method applied to quantitative mineralogical and chemical analysis of ferralitic soil 95
rotations, ley–arable, organic matter changes in sandy soils under 463
roughness, soil surface, laser technology and fractals used to analyse 197

saline soil-water systems, concentration or dilution of 53
sand and sandy soils
chlordane transport and effects of suspended soil material and pig slurry 709
contaminated, dissolved organic matter and copper mobility in 617
flow rate and adsorption/desorption of glyphosate, simazine and atrazine in 149
nematode movement affected by particle size, moisture and bacteria in 237
organic matter changes in ley–arable rotations in 463
soil organic matter and water-soluble fraction under young vegetation 605
textural porosity in clay–silt–sand mixtures 557
Scots pine, analytical pyrolysis of soil profile under 295
semi-arid soil, tropical, phosphate-induced zinc retention in 693
shear box tests, critical state soil mechanics parameters estimated from 503
Si, dissolved: transfer in Amazonian forest 377
Siberia: transformations and neoformations of clay in cryogenic environment 367
siderite, calcite and goethite in Low Moor Peat, genetic and morphological relations between 283
Sierra Nevada, Granada, Spain: mineral formation in micaceous Mediterranean Red soils of 253
silt
-clay fabric, effect on stability of artificial aggregates 569
textural porosity in clay–silt–sand mixtures 557
simazine adsorption/desorption in sandy soils, effect of flow rate on 149
SO_4^{2-} surface complexation on variable charge minerals: competition with oxalate and fulvate 113
solution/solubility
of Al
in Amazonian forest soils 377
free Al^{3+} determined by capillary electrophoresis 107
related to secondary solid phases in upper B horizons with spodic characteristics 317
and soil organic matter in leached mineral forest soils 305
dissolved Al, Fe and Si transfer in Amazonian forest 377
dissolved organic matter
in grass upland soil horizons studied by analytical pyrolysis techniques 1
and mobility of copper in contaminated sandy soil 617
sorption of organic acids in acid soils and its implications in rhizosphere 447
Spain *see* Sierra Nevada
Sphagnum peats, capillary electrophoresis and degree of decomposition of humic substances from 589
spodic characteristics, Al solubility related to secondary solid phases in upper B horizons with 317
straw incorporation, nitrogen mineralization potential of organomineral size separates from soils with 25
strength of soil aggregates, fractal scaling of 203
structure of soil
aggregates, fractal scaling of 203
mathematical morphology for analysing from images 161
surface
complexation of SO_4^{2-} on variable charge minerals: competition with oxalate and fulvate 113
roughness of soil, laser technology and fractals used to analyse 197
suspended soil material and chlordane transport in sandy soil 709
synthesized aluminium hydroxy sulphate minerals, extractability and dissolution kinetics of 669

tea rhizosphere, phosphate rock dissolution and transformation in 477
temperature and moisture regimes and iron oxide mineralogy 385
Terre Rosse: iron oxide mineralogy in relation to moisture and temperature regimes 385
textural porosity in clay–silt–sand mixtures 557
Thailand, organic matter changes in ley–arable rotations in sandy soils of 463
three-dimensional analysis of intraprism structural pores in vertisols 187
trace gas emissions from soils, closed flux chambers for measurement of 701
Transbaikalia: transformations and neoformations of clay in cryogenic environment 367
transfer of dissolved Al, Fe and Si in Amazonian forest 377
transformation
and neoformation of clay in cryogenic environment 367
of phosphorus during incubation of beech leaf litter in presence of oxides 471
tropical
lowland soil, conserved chemical properties of young humic acid fractions in 337
semi-arid soil, phosphate-induced zinc retention in 693

upland soil horizons
grass, organic matter in 1

variable charge minerals, modelling SO_4^{2-} surface complexation on: competition with oxalate and fulvate 113
vegetation *see* plants
vertisols
calcareous, phosphate sorption evaluated from P-sorption curves 661
three-dimensional analysis of intraprism structural pores in 187
unsaturated, hydraulic conductivity of matric porosity of 175
volcanic-ash soil under fallow or cultivation with applied chicken manure, organic matter pools in 427
Vosges, France: influence de la roche-mère et du climat sur les propriétés andiques des sols en région montagnarde tempérée 269

water
budgets in rendzina cropped with oilseed rape receiving varying amounts of fertilizer 37
concentration or dilution of saline systems 53

water (continued)
hydrological pathways from soil under grazed grassland, phosphorus transfer in 65
-soluble fraction of soil organic matter under young vegetation on drift sand 605
see also hydraulic; irrigated; moisture; porosity; solutions
weathering rates of minerals affected by organic soil solutes 397
wheat straw
and aggregate stability and biological activity by earthworms 629
decomposing, CO_2 release from under N-limiting conditions: simulation of carbon turnover 487

zinc
immobilized in soil by Al-montmorillonite and gravel sludge 141
retention, phosphate-induced, in tropical semi-arid soil 693
sorption and uptake, effects of pH on 683